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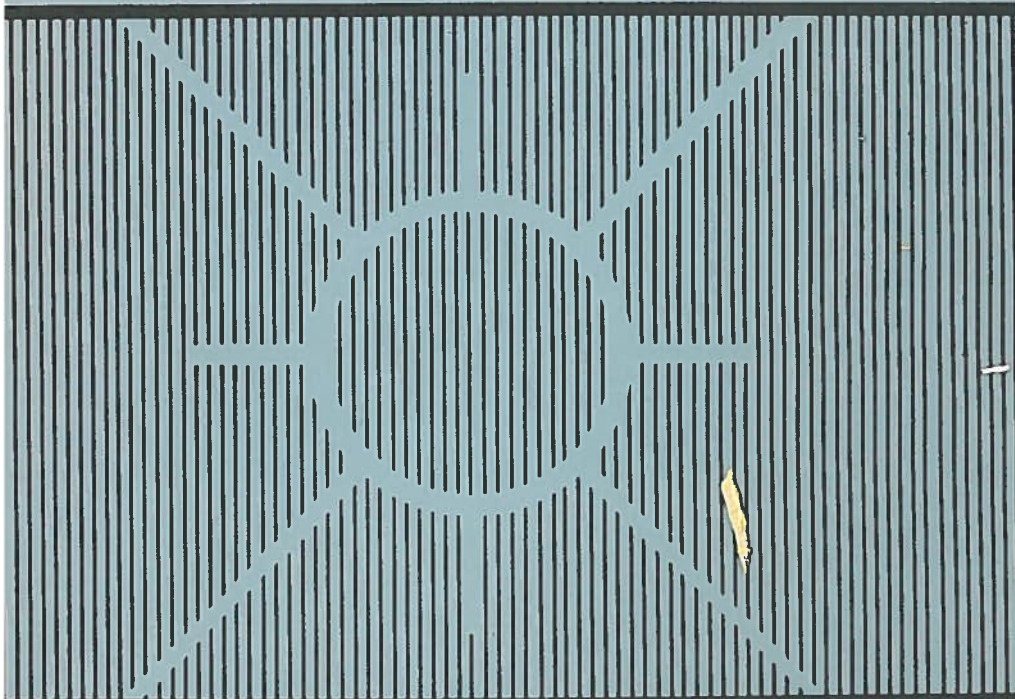
Studies of the  
Organization and  
Control of the U.S.  
Food System

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# THE TART CHERRY SUBSECTOR OF U.S. AGRICULTURE: A REVIEW OF ORGANIZATION AND PERFORMANCE



Agricultural Experiment Stations of Alaska, California, Cornell, Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, New Mexico, North Dakota, Ohio, South Dakota and Wisconsin.

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# **The Tart Cherry Subsector of U.S. Agriculture A Review of Organization and Performance**

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## FOREWORD

During the last decade, the topics of subsector organization and vertical coordination have become increasingly recognized as important factors in the organization and performance of the U.S. food system. However, little research has been conducted on these topics, in part because the methodology and conceptual framework for subsector analysis is not fully developed.

The North Central Regional Research Project NC-117 is examining the organization, coordination and performance of several commodity subsectors. Monographs 5, 6 and 8 provided comprehensive analyses of the U.S. dairy, egg and citrus subsectors, respectively. This volume provides a similar analysis of the U.S. tart cherry subsector. Future monographs will analyze the beef and pork subsectors.

The individuals and organizations participating in NC-117 are listed on page iv.

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# TABLE OF CONTENTS

Acknowledgements .....	iii
Foreword .....	iii
Preface .....	viii
<b>CHAPTER 1. AN OVERVIEW OF TART CHERRY PRODUCTION AND UTILIZATION .....</b>	<b>1</b>
Introduction .....	1
National Production Situation .....	1
Major Tart Cherry Uses .....	5
Importance of Export Markets .....	6
<b>CHAPTER 2. MARKETING CHANNELS FOR TART CHERRIES .....</b>	<b>7</b>
<b>CHAPTER 3. SUPPLY-PRICE FLUCTUATIONS AND PRICE DETERMINATION OF TART CHERRIES .....</b>	<b>11</b>
Supply and Price Fluctuations .....	11
Impact of Fluctuating Supplies .....	12
Price Determination .....	15
<b>CHAPTER 4. THE STRUCTURE OF VARIOUS MARKETS FOR TART CHERRIES .....</b>	<b>17</b>
The Grower-Processor Market for Raw Cherries .....	17
The Grower-Sellers .....	17
Processor-Buyers .....	19
The Processor-Manufacturer Market for Frozen Cherries .....	21
The Freezer-Sellers .....	21
The Manufacturer-Buyers .....	23
Canned Cherry Markets .....	24
Consumer-Size Canned Cherries .....	24
Institutional Size Canned Cherries .....	25
The Consumer-Size Pie Filling Market .....	26
Frozen Pie Market .....	27
Summary of Tart Cherry Market Structure .....	28

<b>CHAPTER 5. CONDUCT IN THE CHERRY MARKETING SYSTEM</b> .....	29
Conduct in Frozen Cherry Markets .....	29
Frozen Pie Markets .....	34
Canned Cherry Markets .....	35
Consumer-Size Canned Cherries .....	35
Institutional Size Canned Cherries .....	36
Commodity Demand Expansion and Market Development .....	37
Summary of Tart Cherry Subsector Conduct .....	38
<b>CHAPTER 6. MARKETING PERFORMANCE OF THE TART CHERRY SUBSECTOR</b> .....	40
Introduction .....	40
Vertical Coordination and Transfer of Demand Information .....	41
Vertical Coordination and Supply Planning .....	44
Long-Term Orchard Investment Decisions .....	44
Widely Fluctuating Supplies and Prices .....	45
Investment in Processing Capacity .....	48
Some Activities for Reducing Market Fluctuations .....	49
Commodity Demand Expansion, Promotion, and Market Development .....	51
New Cherry Products and Adaptability to Changing Consumer Preferences .....	53
Container Issues .....	56
Some Quality Issues .....	59
Distribution of Risk: High Risks Shifted Onto Other Participants .....	60
Summary .....	61
<b>CHAPTER 7. THE FEDERAL MARKETING ORDER STORAGE FOR TART CHERRIES IN RELATION TO PERFORMANCE OF THE INDUSTRY</b> .....	62
The Main Objective — To Stabilize Supplies .....	62
Operation and Performance of the Marketing Order .....	62
The 1972-1973 Experience .....	62
The 1974 Experience .....	65
The 1975-1976 Experience .....	65
Some Possible Changes for Improved Performance .....	67
Overall Evaluation .....	69

<b>CHAPTER 8. EVOLVING ORGANIZATIONAL AND INSTITUTIONAL CHANGES</b> .....	70
Processing Cooperatives .....	70
Cooperative-Corporation Joint Ventures .....	73
Grower Bargaining in a Changing Economic Environment .....	73
Overview .....	76

<b>CHAPTER 9. THE TART CHERRY SUBSECTOR IN PERSPECTIVE</b> ....	77
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**FIGURES**

Figure 1. Great Lakes Tart Cherry Production Areas .....	2
Figure 2. Tart Cherry Production .....	3
Figure 3. Bearing Tart Cherry Trees .....	4
Figure 4. Tart Cherry Marketing Channels .....	7
Figure 5. Major Utilization and Market Channels for Red Tart Cherries .....	9
Figure 6. Tart Cherry Marketing Organizations .....	39

**TABLES**

Table 1. Utilization Trends of U.S. Tart Cherry Crop .....	5
Table 2. U.S. Production, Farm Pr .....	
Table 4. Cherry Processing and Buying Patterns .....	20
Table 5. Within-Season Price Patterns for Frozen Tart Cherries .....	31
Table 6. Cherry Prices During the 1972-1973 Use of the Marketing Order .....	63
Table 7. Cherry Prices During the 1975-1976 Use of the Marketing Order .....	66



## PREFACE

The organization and coordination of many agricultural commodity subsectors have undergone significant changes in recent years. For a variety of reasons, some subsectors have moved from loosely organized arrays of small firms linked by spot markets toward more tightly organized systems frequently linked by contracts, vertical ownership or joint ventures. Large nonfarm firms play an increasingly important role in the control and coordination of many subsectors.

Changes in organization and coordination of subsectors particularly raise questions about:

1. The control of subsectors—regardless of the observable effects on performance, it is important to understand who has control over strategic aspects of a subsector and the degree, if any, that control is shifting.
2. The effects of alternative vertical organization and control patterns on subsector performance, particularly:
  - a. The extent to which supply offerings match demand preferences: quantity, quality, timing, and location.
  - b. Technical and operational efficiency of entire subsector.
  - c. Equity of distribution of returns, rights, risks, information and responsibilities.
  - d. Access to subsector, including the widening or narrowing of markets, market foreclosure, vertical “squeezing” opportunities, and the conditions of entry.
  - e. The reliability and stability of subsector performance.

These are some of the concerns that led North Central Regional Project 117 to include the analysis of subsector organization and coordination as one of its principal areas of inquiry. The early work of this committee revealed two important obstacles that prevent answers to the above questions:

1. There is inadequate information on the organization of various commodity subsectors and the extent to which these have changed in recent years.
2. Subsector analysis is a relatively recent undertaking for economists. Although there are a variety of theories about firm and market behavior, there are no well-developed theories of subsector organization and performance.

In an effort to remove the first obstacle, several task forces were organized to develop comprehensive descriptive reports on selected subsectors. This report attempts to summarize what is known about the organization, coordination, and performance of the tart cherry subsector.

## ANALYTICAL FRAMEWORK

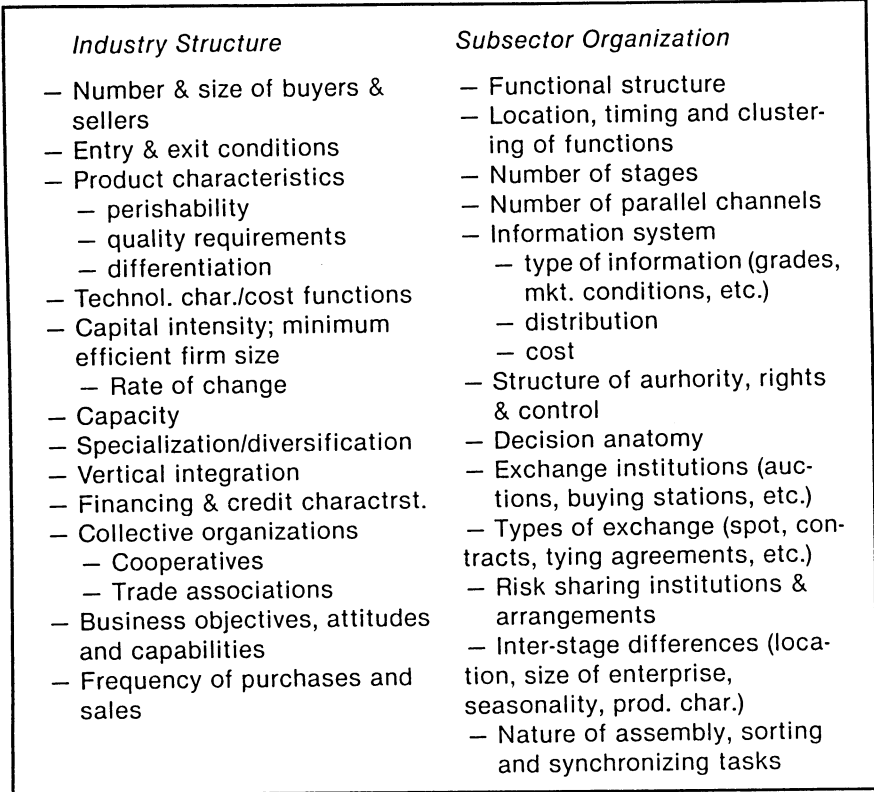
For this report, an agricultural subsector is viewed as an interdependent array of organizations, resources, laws, and institutions involved in producing, processing, and distributing an agricultural commodity. A subsector normally includes several industries (firms that are similar in functions performed and products produced), such as the butter manufacturing or food retailing industries. Subsector analysis is more than an analysis of the various industries that are part of a subsector, however. Although such industry analysis may be useful, the essential characteristic of subsector analysis is focusing in on the total vertical complex as a *system*.

Viewed as a system, a subsector is analogous to a pipeline with inlets, outlets, and valves; or, assembly line in which functions are performed and value added at several succeeding stages. This view focuses attention on the total vertical value adding process leading to the final products of the subsector, on control of critical parts of the subsector, and on the coordination needed to efficiently integrate the contributions of each stage and to ensure that what comes off the end of the assembly line is in fact what is demanded.

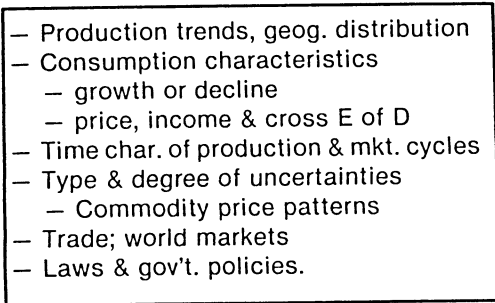
Efforts by NC-117 researchers to develop a conceptual framework for subsector analysis have met with modest success. Henderson and Marion have attempted to adapt the structure-conduct-performance paradigm of industrial organization theory to subsector analysis. Figure i is one result of these efforts. This is the general framework and classification scheme that has been used by the task force which produced this report as well as by other NC-117 subsector task forces. Although Figure i suggests certain casual relationships, the testing of these relationships will largely occur in future research. The present report may provide clues to such relationships. However, it is primarily intended to lay the groundwork for future analysis of subsector organization-performance relationships.

Figure i. Subsector structure, conduct, and performance paradigm.

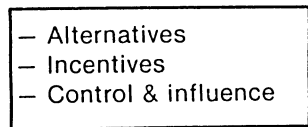
**STRUCTURE**



**BASIC CONDITIONS**



**FIRM DECISION ENVIRONMENT**



## PERFORMANCE

<i>Industry</i>	<i>Subsector</i>
<ul style="list-style-type: none"> <li>– Technical &amp; operational efficiency</li> <li>– Pricing efficiency (profit &amp; output levels)</li> <li>– Product characteristics                             <ul style="list-style-type: none"> <li>– quality/wholesomeness</li> <li>– variety</li> </ul> </li> <li>– Progressiveness (process &amp; product)</li> <li>– Selling activities                             <ul style="list-style-type: none"> <li>– Expense</li> <li>– Influence on consumption pattern &amp; social values</li> </ul> </li> <li>– Market access and/or foreclosure</li> </ul>	<ul style="list-style-type: none"> <li>– Allocative accuracy</li> <li>– Extent to which S offerings match D preferences re: quantity, quality, timing &amp; location</li> <li>– Stability of output, prices &amp; profits</li> <li>– Technical &amp; operational efficiency                             <ul style="list-style-type: none"> <li>– at each stage and in linking stages (transaction costs)</li> </ul> </li> <li>– Equity re: distribution                             <ul style="list-style-type: none"> <li>– Returns vs: investments and risks</li> <li>– Rights and control vs. investments and risk</li> </ul> </li> <li>– Accuracy, adequacy &amp; equity of information distributed</li> <li>– Subsector adaptability</li> <li>– Level &amp; type of employment</li> <li>– Waste &amp; spoilage                             <ul style="list-style-type: none"> <li>– Product waste</li> <li>– Resource conservation</li> <li>– Capacity utilization</li> </ul> </li> </ul>

## CONDUCT

<i>Industry</i>	<i>Subsector</i>
<ul style="list-style-type: none"> <li>– Product strategy</li> <li>– Pricing behavior</li> <li>– Advertising</li> <li>– Research &amp; innovation</li> <li>– Mergers &amp; divestitures</li> <li>– Risk mgt. practices</li> </ul>	<ul style="list-style-type: none"> <li>– Efforts to shift control                             <ul style="list-style-type: none"> <li>– Type of exchange used</li> </ul> </li> <li>– Coordination activities                             <ul style="list-style-type: none"> <li>– Prediction of future S, D, and price</li> <li>– Information communicated</li> <li>– Quality specification</li> <li>– Scheduling and timing synchronization</li> <li>– Efforts to influence inter-stage cooperation/conflict</li> </ul> </li> <li>– Process of determining terms of exchange (private treaty, administered bid-offer-acceptance, etc.)</li> <li>– Response to change forces</li> </ul>